In the Claims

1. (currently amended) Apparatus for providing a heated cleaning fluid to a vehicle surface comprising:

a) an inlet port for receiving an amount of fluid;

b) a reservoir in fluid communication with the inlet port for storing fluid which enters a reservoir interior from the inlet port;

c) an outlet port in fluid communication with the reservoir for dispensing an amount of heated fluid;

d) a heating element for heating fluid that passes from the ~~inlet~~ reservoir to the outlet; and

e) a control circuit for energizing at least a portion of the heating element with a voltage to heat the heating element and the fluid passing from the inlet to the outlet.

2. (Currently amended) The apparatus of claim 1 wherein the ~~heater~~ heating element is external to the reservoir.

3. (Original) The apparatus of claim 1 wherein the heating element is an electrically conductive tube through which fluid passes from the inlet port to the outlet port.

4. (Original) The apparatus of claim 3 wherein the electrically conductive tube surrounds the reservoir.

5. (Original) The apparatus of claim 3 wherein the electrically conductive tube is connected in series with the reservoir.

6. (Original)The apparatus of claim 1 wherein the heating element comprises a heat dissipating component of the control circuit.

7. (Original)The apparatus of claim 1 wherein the heating element is in direct contact with the reservoir.

8. (Original)The apparatus of claim 1 wherein the heating element is in thermal communication with the reservoir.

9. (Currently Amended) The apparatus of claim 1 wherein ~~the~~ an additional heating element is internal to the reservoir.

10. (Original)The apparatus of claim 1 wherein the control circuit is disposed on a circuit board positioned adjacent to the reservoir and the control circuit includes a thermal fuse mounted to the circuit board in close proximity to the reservoir.

Please Cancel claim 11 without prejudice or disclaimer

12. (Original)The apparatus of claim 1 wherein the control circuit is disposed on a circuit board positioned adjacent to the reservoir and the control circuit includes a heat dissipating device mounted to the circuit board and to the reservoir.

13. (Original) The apparatus of claim 12 wherein the heat dissipating device is a FET.

14. (Original) The apparatus of claim 1 further comprising insulation surrounding the reservoir to reduce heat loss from the reservoir.

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16. (Currently Amended) Apparatus for providing a heated cleaning fluid to a vehicle surface comprising:

a) an inlet port for receiving an amount of fluid;

b) a reservoir in fluid communication with the inlet port for storing fluid which enters a reservoir interior from the inlet port;

~~b~~ c) an outlet port for dispensing an amount of heated fluid;

~~c~~ d) a heating element for heating fluid as it passes from the ~~inlet port~~ reservoir to the outlet port; ~~and~~

~~d~~ e) a control circuit for energizing at least a portion of the heating element with a voltage to heat the heating element and the fluid passing from the inlet to the outlet; and

[[e]] f) an electrical fuse in communication with the heating element that will open after current flows to the heating element for a ~~predetermined~~ period of time.

17. (Currently Amended) The apparatus of claim 16 wherein the fuse is located between a battery and ~~a heater~~ the heating element.

18. (Currently Amended) The apparatus of claim 16 wherein the electrical fuse opens when more than a predetermined percentage of a heating element rated power is applied to the heating element for more than a predetermined amount of time.

19. (Currently Amended) The apparatus of claim 16 wherein the control circuit includes a FET driver and wherein the electrical fuse opens as a result of shorting the FET driver.

20. (Currently amended) Apparatus for providing a heated cleaning fluid to a vehicle surface comprising:

a) an inlet port for receiving an amount of fluid;

b) a reservoir in fluid communication with the inlet port for storing fluid which enters a reservoir interior from the inlet port;

~~b~~ c) an outlet port for dispensing an amount of heated fluid;

~~c~~ d) a heating element for heating fluid as it passes from the reservoir ~~inlet port~~ to the outlet port; and

~~d~~ e) a control circuit for selectively energizing at least a portion of the heating element with a

voltage to heat the heating element and the fluid passing from the inlet to the outlet based on a voltage applied to the control circuit.

21. (Original) The apparatus of claim 20 wherein the control circuit prevents energizing of the heating element when the voltage applied to the control circuit is outside a predetermined operating voltage range.

22. (Original) The apparatus of claim 21 wherein the operating voltage range is about 8 volts to about 16.5 volts.

23. (Original) The apparatus of claim 20 wherein the control circuit allows energizing of the heating element after a crank signal is recognized.

24. (Original) The apparatus of claim 23 wherein the crank signal is characterized by a reduction of the voltage applied to the control circuit followed by a rise of voltage applied to the control circuit.

25. (Original) The apparatus of claim 20 wherein the control circuit prevents energizing of the heating element when the voltage applied to the control circuit drops.

26. (Original) The apparatus of claim 20 wherein the control circuit prevents energizing of the heating element when the voltage applied to the control circuit signal drops after a crank signal is recognized.

27. (Original) The apparatus of claim 20 wherein the control circuit ramps up the voltage to the heating element over a predetermined period of time.

28. (Currently amended) The apparatus of claim 20 wherein the ~~control circuit~~ control circuit ramps down the voltage to the heating element to stop energizing the heating element over a predetermined period of time.

29. (Currently amended) Apparatus for providing a heated cleaning fluid to a vehicle windshield comprising:

a) an inlet port for receiving an amount of fluid;

b) a reservoir in fluid communication with the inlet port for storing fluid which enters a reservoir interior from the inlet port;

~~b~~ c) an outlet port for dispensing an amount of heated fluid;

~~c~~ d) a heating element for heating fluid as it passes from the ~~inlet port~~ reservoir to the outlet port;

~~d~~ e) a wiper motor for selectively driving wiper blades; and

[[e]] f) a control circuit for selectively energizing at least a portion of the heating element with a voltage to heat the heating element and the fluid passing from the inlet to the outlet and including an output for controlling the wiper motor.

30. (Original) The apparatus of claim 29 wherein the control circuit disables the wiper motor for a predetermined period of time after energizing of the heating element.

31. (Original) The apparatus of claim 29 wherein the control circuit disables the wiper motor during a first heat cycle of the heating element.

32. (Original) The apparatus of claim 29 further comprising a first user input device coupled to the control circuit for controlling a washer pump and a second user input device for controlling the wiper motor coupled to said control circuit and wherein the washer pump and the wiper motor a controlled independently by the control circuit upon independent movement of the first and second user input devices.

33. (Currently Amended) Apparatus for providing a heated cleaning fluid to a vehicle windshield comprising:

a) an inlet port for receiving an amount of fluid;

b) a reservoir in fluid communication with the inlet port for storing fluid which enters a reservoir interior from the inlet port;

~~b~~ c) an outlet port for dispensing an amount of heated fluid;

~~c~~ d) a heating element for heating fluid as it passes from the ~~inlet port~~ reservoir and the outlet port; and

~~d~~ e) a control circuit for selectively energizing at least a portion of the heating element with a voltage to heat the heating element and the fluid passing from the inlet to the outlet and for controlling the wiper motor, said control circuit being disposed on a circuit board positioned adjacent to said heating element.

34. (Currently Amended) The apparatus of claim 33 wherein the control circuit includes a thermal fuse mounted ~~to the circuit board~~ in close proximity to the heating element.

35. (Original) The apparatus of claim 33 wherein the control circuit includes a heat dissipating device mounted to the circuit board and to the heating element.

36. (Currently amended) A method for providing a heated cleaning fluid to a vehicle surface comprising:

a) coupling a fluid carrying tube and reservoir together to provide a combined fluid flow path ~~to a source of cleaning fluid~~;

b) routing a cleaning fluid from a source of cleaning fluid into an inlet port of the combined fluid flow path of the tube and reservoir such that the fluid flows from the inlet into the tube and reservoir to an outlet port from the combined fluid flow path of the tube and reservoir;

c) energizing a heating element with a voltage to heat the tube and reservoir and the fluid passing through the combined fluid flow path of the tube and reservoir; and

d) directing the fluid from the outlet port to a nozzle for dispensing heated fluid against said

surface.

37. (Currently Amended) A method for providing a heated cleaning fluid to a vehicle surface comprising:

a) coupling a fluid carrying tube and reservoir together to provide a combined fluid flow path ~~to a source of cleaning fluid~~;

b) routing a cleaning fluid from a source of cleaning fluid into an inlet port of the combined fluid flow path of the tube and reservoir such that the fluid flows from the inlet into the tube and reservoir to an outlet port from the combined fluid flow path of the tube and reservoir;

c) energizing a heating element with a voltage to heat the tube and reservoir and the fluid passing through the combined fluid flow path of the tube and reservoir;

d) opening a path from a source of said voltage to the heating element if current flows to the heating element for ~~more than~~ a ~~predetermined~~ period of time; and

e) directing the fluid from the outlet port to a nozzle for dispensing heated fluid against said surface.

38. (Original) The method of claim 37 wherein the path opens when more than a predetermined percentage of a heating element rated power is applied to the heating element for more than a predetermined amount of time.

39. (Currently Amended) A method for providing a heated cleaning fluid to a vehicle surface comprising:

a) coupling a fluid carrying tube and reservoir to provide a combined fluid flow path ~~to a source of cleaning fluid~~;

b) routing a cleaning fluid from a source of cleaning fluid into an inlet port the combined fluid flow path of the tube and reservoir such that the fluid flows from the inlet into the tube and reservoir to an outlet port the combined fluid flow path of the tube and reservoir;

c) selectively energizing a heating element with a voltage to heat the tube and reservoir and

the fluid passing through the combined fluid flow path of the tube and reservoir based on an applied vehicle battery voltage; and

d) emitting the fluid ~~from the tube~~ from the outlet port in fluid communication with a nozzle for dispensing heated fluid against said surface.

40. (Original) The method of claim 39 further comprising preventing energizing of the heating element when the battery voltage is outside a predetermined operating voltage range.

41. (Original) The method of claim 40 wherein the operating voltage range is about 8 volts to about 16.5 volts.

42. (Original) The method of claim 39 further comprising allowing energizing of the heating element after a crank signal is recognized.

43. (Original) The method of claim 42 wherein the crank signal is characterized by a reduction of the voltage applied by the battery followed by a rise of voltage applied by the battery.

44. (Original)The method of claim 39 wherein energizing of the heating element is prevented when the applied battery voltage drops.

45. (Original)The method of claim 39 wherein energizing of the heating element when the voltage is prevented when the applied battery voltage drops after a crank signal is recognized.

46. (Original)The method of claim 39 wherein the voltage to the heating element is gradually ramped up.

47. (Original)The method of claim 39 wherein the voltage to the heating element is gradually ramped down to gradually stop energizing the heating element.

48. (Currently Amended) A method for providing a heated cleaning fluid to a vehicle surface comprising:

a) coupling a fluid carrying tube and reservoir together to provide a combined fluid flow path ~~to a source of cleaning fluid~~;

b) routing a cleaning fluid from a source of cleaning fluid into an inlet port of the combined fluid flow path of the tube and reservoir such that the fluid flows from the inlet into the tube and reservoir to an outlet port from the combined fluid flow path of the tube and reservoir;

c) energizing a heating element with a voltage to heat the tube and reservoir and the fluid passing through the combined fluid flow path of the tube and reservoir based on an applied vehicle battery voltage; and

d) selectively emitting the fluid from the tube from the outlet port in fluid communication with a nozzle for dispensing heated fluid against said surface independent of operation of a wiper motor.

49. (Original) The method of claim 48 further comprising disabling the wiper motor for a predetermined period of time after energizing of the heating element.

50. (Original) The method of claim 48 further comprising disabling the wiper motor during a first heat cycle of the heating element.